Date: Mon,  4 Apr 94 04:30:34 PDT
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>
Errors-To: Ham-Homebrew-Errors@UCSD.Edu
Reply-To: Ham-Homebrew@UCSD.Edu
Precedence: Bulk
Subject: Ham-Homebrew Digest V94 #86
To: Ham-Homebrew

Ham-Homebrew Digest         Mon,  4 Apr 94       Volume 94 : Issue   86

Today's Topics:



Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".


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Date: 3 Apr 94 17:38:40 GMT
From: dog.ee.lbl.gov!agate!howland.reston.ans.net!torn!news.unb.ca!
UNBVM1.CSD.UNB.CA@ucbvax.berkeley.edu
Subject: <none>
To: ham-homebrew@ucsd.edu

We are trying to make a regulated power supply (suitable for Tx) out
of a computer power supply. It is made by RW, a German manufacturer,
called a PC40 power supply, that will take 110-240 volts, rated at
220 Watts (Part # 380708-02)

Our question is: Is the DC ouput sufficiently regulated to provide
clean RF output out of a radio? Also, can one bank two of these
power supplies in parallel and use the combined output (400 W) to
drive a linear amplifier?

Tnx in advance

Luis Nadeau, VE9LN

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Date: 3 Apr 94 17:00:30 GMT
From: agate!usenet.ins.cwru.edu!odin!trier@ucbvax.berkeley.edu
Subject: <none>
To: ham-homebrew@ucsd.edu

In article <03APR94.14736203.0178@unbvm1.csd.unb.ca>,
NADO000  <NADO@UNB.CA> wrote:
>Our question is: Is the DC ouput sufficiently regulated to provide
>clean RF output out of a radio?

That depends on the details of the supply.  You might need to add some
extra supply filtering to get rid of a ~15 kHz switching whine.

An issue that should be of more concern is the voltage and current
ratings.  A 200 Watt supply may not be able to supply all of that power
at 12V.  A typical PClone supply can put out 35 amps or so at 5V,
perhaps 1.2 A at +12V and 1A at -12V, and a couple hundred milliamps at
-5V.  This would be a poor match for a linear amplifier that wants 20
amps or more at 12V.  If your supply is something weird that puts out
gobs of power at 12V, perhaps it is a good match.  That is unlikely.

A computer supply can reasonable for other purposes.  QRP rigs can run
off the 12V 1A output of a PClone power supply.  Put an appropriately
sized resistor across the +5V line or else the supply might not be loaded
enough for good regulation.

        Stephen

--
Stephen Trier  KB8PWA       "It don't mean a thing if it ain't got that
Other: trier@ins.cwru.edu     certain je ne sais quois."
Home: sct@po.cwru.edu                          - Peter Schickele

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Date: 3 Apr 1994 18:22:06 GMT
From: ihnp4.ucsd.edu!usc!math.ohio-state.edu!magnus.acs.ohio-state.edu!csn!
col.hp.com!bobw@network.ucsd.edu
Subject: advice fm
To: ham-homebrew@ucsd.edu

A Cotton (acotton@cs.uct.ac.za) wrote:
: Hi Everyone.

: I'm looking for advice from someone knowledgable in radio and electronics.
: A normal f.m radio recieves up to about 108 Mhz.

: Does anyone know how to adjust it to recieve from 108 to about 130 Mhz?
: These are the aircraft frequencies and it'd be cool to listen in. I've
: heard that it's quite a simple operation involving a small adjustment in
: any cheap f.m reciever.
: Any advice is very welcome. Remember I'm a very non-specialist audience
: here, so please keep it simple.
: I'd appreciate mail in this regard.
:  Thanks-

: -- Ari Cotton.

 I think other posters have pointed out that this will NOT be a simple mod.
 There are many cost-effective solutions to listening to the aircraft band
 if that is the goal here. Check your local Radio Shack catalog.

Bob Witte / bobw@col.hp.com  / Hewlett Packard PMO / KB0CY  / (719) 590-3230

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Date: 3 Apr 94 22:24:25 GMT
From: agate!howland.reston.ans.net!newsserver.jvnc.net!yale.edu!cs.yale.edu!
theodolite!tstrohma@ucbvax.berkeley.edu
Subject: advice fm
To: ham-homebrew@ucsd.edu

In article <2nn1ge$kn7@hp-col.col.hp.com>, Bob Witte <bobw@col.hp.com> wrote:
>
> I think other posters have pointed out that this will NOT be a simple mod.
> There are many cost-effective solutions to listening to the aircraft band
> if that is the goal here. Check your local Radio Shack catalog.
>

Why?  If it's an analog FM radio, couldn't you put an inductor or
capacitor in series with the tuning system to change the frequency, or
am I way off?

--
Trevor Strohman                  | Audio/Amateur Radio/Programming
tstrohma@theodolite.ae.calpoly.edu  | Running/Cycling/Studying/Sleeping...

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Date: Sun, 3 Apr 1994 13:31:53 GMT
From: ihnp4.ucsd.edu!swrinde!gatech!wa4mei!ke4zv!gary@network.ucsd.edu
Subject: How phasing SSB Exciters Work (Was:  RF and AF speech processors)
To: ham-homebrew@ucsd.edu

In article <CnJrA3.1I3@srgenprp.sr.hp.com> alanb@sr.hp.com (Alan Bloom) writes:

>Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
[chart deleted]
>: Now this chart illustrates the problem I've been talking about. As
>: we can see, the difference in delay with frequency is quite marked.
>: Sure the phase delay increases *smoothly* with frequency delta, but
>: the magnitude of the error rapidly climbs with increasing frequency
>: delta. This is our old friend click-boom.   ...
>
>Other people besided Gary may be confused by this, so I'll post an
>explanation.

I'm not confused. I calculated the delays based on the graph you posted.
Delay equals the reciprocal of frequency times the total phase delay in
degrees divided by 360.

>The graph above plots phase, not delay.  A constant delay results in
>a constantly-rising phase plot.  For example, a 1 millisecond delay
>is 36 degrees at 100 Hz, 360 degrees at 1000 Hz, 3600 degrees at
>10,000 Hz, etc.

Yeah, but that isn't what your graph showed.

>While the plot above looks like a straight line, it really isn't because
>of the logarithmic x-axis.

Bingo! I check plotted it on semi-log paper then replotted on a linear
graph from which I calculated my differential delay numbers.

>However, as the chart that Tom Bruhns posted of
>a typical phase-shift network shows, it really isn't too bad.  His chart
>shows that between 400 and 2786 Hz, the maximum phase error from a straight
>line varies smoothly between +17.2 to -20.9 degrees, which is far better
>than you would get with a typical transceiver-type crystal filter.

As I commented, his table looked much better than your graph, and I
calculated differential delays based on it too that were nearly 10
times smaller. It's just that I've seen phase plots for crystal and
mechanical filters which, *away from the edges*, where Tom's table
looked bad too, looked at least as good as Tom's phase shifter. And
note also that the network Tom modelled is not "typical", it is
considerably more complex than the traditional Dome based networks.
They tend to really suck in the differential delay department because
they're based on the same simple semi-log response as your graph. I
don't think he included an AF pre-filter in the table either.

I'll readily agree that the receiver type filters used in many ham
rigs for SSB transmit signal generation, suck wind. But that's a
different issue. Good filter designs are available, as witness

filters we use for VSB video, and in certain telco FDM equipment
that have a maximally flat phase response in the passband.  We simply
can't tolerate differential delay in video systems, yet we use filters
instead of phasing to generate VSB signals. It's not a matter of economy,
it's what works best.

Gary
--
Gary Coffman KE4ZV          |    You make it,     | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems |    we break it.     | uunet!rsiatl!ke4zv!gary
534 Shannon Way             |    Guaranteed!      | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244     |                     |

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Date: 3 Apr 94 15:28:58 GMT
From: agate!howland.reston.ans.net!europa.eng.gtefsd.com!darwin.sura.net!sgiblab!
barrnet.net!nntp.crl.com!crl.crl.com!not-for-mail@ucbvax.berkeley.edu
To: ham-homebrew@ucsd.edu

References <2nfb0q$d12@hpscit.sc.hp.com>, <2ng30c$g7r@crl2.crl.com>,
<2nlebi$j53@hpscit.sc.hp.com>mail
Subject : Re: How to do PSK demodulation?

Richard Karlquist (rkarlqu@scd.hp.com) wrote:

: The difference is in the transitions.  With BPSK, the envelope remains constant
: and the phase rotates from 0 to 180 degrees.  With ASK, the amplitude ramps
: down to zero while at 0 degrees phase, then the amplitude ramps back up to
: full amplitude while at 180 degrees.   A diode detector with a Nyquist pulse

Once again:  it is NOT necessary for PSK to have a constant envelope.
If you disagree with this, go talk to one of your HP friends that are
working on the test equipment for North American digital cellular.
NADC is Pi/4 DQPSK and it does NOT have a constant envelope.  Folks
have, and continue to ship what they call BPSK systems that fall
under your definition of ASK.  To be consistant with your stand that
ONLY the phase changes in PSK, one would conclude that only the
amplitude changes in ASK, right?  A phase change at the zero crossings
would not be allowed.  It has always been my impression that ASK
was like sending data into an AM modulator -- complete with the
offset so that over 100% modulation was avoided.  It should be
possible to get NRZ data directly from an envelope detector without
playing transition games.

Vendors such as Alpha Industries produce "Bi-Phase modulators" as
standard products for implementation in BPSK modulators.  These products
have NO Q CHANNEL INPUT, so it would be impossible to generate a

constant envelope signal with them.

This "symantic nit" has turned into a rather lively discussion, it would appear. I have checked the books at my disposal and can't really find any that have drawn the lines between modulation formats in the manner you describe. What sources have led you to these conclusions? I would like to check into them.

--
~~ dmiller@crl.com ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
~ Don Miller > Opinions expressed here < "They will never forget you ~
~ ESP, Inc. > are my own! < till somebody new comes along"~
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ -->The Eagles<-~~~~~~~~~~~~~

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Date: 4 Apr 94 00:36:36 GMT
From: dog.ee.lbl.gov!agate!iat.holonet.net!rohrwerk@ucbvax.berkeley.edu
To: ham-homebrew@ucsd.edu

References <1994Mar29.160241.20722@ke4zv.atl.ga.us>,
<CnG3Jt.Htw@srgenprp.sr.hp.com>, <2nahmv$9q9@hpscit.sc.hp.com>
Subject : Re: How phasing SSB Exciters Work (Was: RF and AF speech processors)

rkarlqu@scd.hp.com (Richard Karlquist) writes:

>In any event, if the receiver is a transceiver, and it uses
>the same filter for receive and transmit, then all the nasty
>ripples you avoided with a phasing type transmitter will
>be reintroduced at the receiver. So you really need a phasing
>transmitter and phasing receiver to get "hi-fi" audio. Or

Like the Campbell R2 receiver, Jan. 1993 QST! For whatever combination of reasons, it IS a clean sounding unit. I'll bet his companion phasing SSB exciter sounds just as good.

John K0JD

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End of Ham-Homebrew Digest V94 #86
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